

Isaac S. Narrett

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Research Interests

My work focuses on magnetic fields, planetary evolution, and habitability, meeting at the intersection of planetary science and space physics. My research combines magnetic field modeling, magnetohydrodynamic (MHD) simulations, and spacecraft observations to investigate planetary processes and dive into the interiors of terrestrial bodies and subsurface oceans of icy moons.

Education

Massachusetts Institute of Technology (MIT), Cambridge, MA (2021-)

Ph.D., Planetary Science

University of Michigan, Ann Arbor, MI (2017-2021)

B.S.E., Physics, *summa cum laude*

Minor, Space Science Engineering

Employment

Massachusetts Institute of Technology (MIT), Cambridge, MA

Graduate Student Researcher (2021-)

Battelle Memorial Institute, Columbus, OH

Engineering Modeler Intern (Summer 2020)

University of Michigan, Ann Arbor, MI

Moldwin Magnetism Lab Research Assistant (2017-2021)

Teaching and Mentorship

Undergraduate Research Mentor, MIT UROP (Summer, Fall 2025)

Mentor, Haverford College Student (Summer 2025)

Graduate Teaching Assistant, Hands-on Astronomy (Spring 2024 and Spring 2025)

Polygence Paid Mentor, King's College School, Wimbledon, UK (Summer 2025)

Mentor, Cambridge High School Student (Summer 2024)

Professional Experience

Executive secretary and external reviewer for NASA program review panel (Spring 2025)

AGU *Planetary Magnetism* session convener (Winter 2025)

Co-Reviewer for *Philosophical Transactions of the Royal Society A* (Winter 2024)

Lunar Planetary Science Conference *Mercury Science from the Inside Out* session moderator (Spring 2025)

Honors, Grants, and Awards

Co-I on James Webb Space Telescope (JWST) Cycle 4 DD Proposal (*Selected* 2025)

Elected to Sigma Xi (2025)

NASA FINESST Fellow Award (2023-2025)

MIT - James L. Elliot Fellowship (2023)

MIT - Presidential Fellowship (2021)

Michigan - Al Levinson Memorial Scholarship (2020-2021)
Michigan - Guezner Engineering Merit Scholarship (2019-2020)

Service and Outreach

Proposal team, MIT QoL *Selected* Grant - K-12 Outreach Kit (Spring 2025)
Visit, Amigos School Visit Cambridge (Spring 2025)
Visit, Manning Elementary School (Spring 2024)
Organizer, MIT EAPS Planetary Lunch Seminar (2023-)
Organizer, Cambridge Science Carnival (2022-2025)

Journal Articles

Published:

Narrett, I. S., Oran, R., Chen, Y., Miljkovic, K., Toth, G., Mansbach, E. N., Weiss, B. P. (2025). Impact plasma amplification of the ancient lunar dynamo. *Science Advances*.
Space.com Article

Narrett, I. S., Rackham, B. V., de Wit, J. (2024) Axisymmetric High Spot Coverage on Exoplanet Host HD 189733 A. *The Astronomical Journal*.

Strabel, B. P., Regoli, L. H., Moldwin, M. B., Ojeda, L. V., Shi, Y., Thomas, J. D., **Narrett, I. S.**, et al. (2022). Quad-Mag board for CubeSat applications. *Geoscientific Instrumentation, Methods and Data Systems*.

In Prep:

Schneck, U. G., Biersteker, J. B., **Narrett, I. S.**, Jia, X., Weiss, B. P., Confirmation of an ocean on Callisto using Bayesian reanalysis of Galileo induction measurements.

Narrett, I. S., Oran, R., Chen, Y., Miljkovic, K., Toth, G., Johnson, C. L., Weiss, B. P., Impact plasma amplification of the ancient Mercury magnetic field.

Narrett, I. S., Weiss, B. P., Steele, S. C., Biersteker, J. B., Mercury Crustal Magnetization Requires a Stronger Ancient Dynamo.

Invited Talks

Lunar and Hermean Impact Plasmas, UC Berkeley Planetary Science Seminar Series (2025)
Lunar Impact-Plasma Dynamo Amplification and Future Tests, AGU Winter Conference (2025)
The Uranian Magnetosphere, Denmark Technical University (2024)

Conference Presentations (*Talk Given)

Weiss, B. P., Chaffee, T. M., Gattacceca, J., Tikoo, S. M., McDonald, C., Hodges, K. V., Lepaulard, C., Miljković, K., **Narrett, I. S.**, Evidence for a long-lived lunar dynamo. *7th Beijing Earth and Planetary Interior Symposium* (2025)

***Narrett, I. S.** et al., Mercury's Ancient Crustal Magnetization: A Stronger Dynamo can be Confirmed by Future BepiColombo Measurements. *EPSC-DPS Joint Meeting* (2025)

Weiss, B. P., Merayo, J. M. G., Jørgensen, J. L., ***Narrett, I. S.**, Heritage Magnetometers

for the Uranus Orbiter and Probe from the Technical University of Denmark. *6th International Workshop on Instrumentation for Planetary Missions* (2025)

***Narrett, I. S.** et al., Does Mercury’s Ancient Crustal Magnetization Require a Stronger Ancient Dynamo? *Lunar and Planetary Science Conference* (2025)

Narrett, I. S. et al., HST and TESS point to a highly spotted photosphere for HD189733A. *TESS Science Conference III* (2024)

***Narrett, I. S.** et al., Lunar Crustal Magnetization from Impact-Generated Plasma Amplification of the Lunar Dynamo. *Lunar and Planetary Science Conference* and *AGU Fall Meeting* (2024)

Narrett, I. S. et al., Testing Whether a Dynamo Magnetic Field Amplified by Impact Plasmas Can Explain the Magnetization of the Moon. *Lunar and Planetary Science Conference* and *ASTRONUM* (2023)

Strabel, B. P., **Narrett, I. S.**, et al. Magnetic Field Measurement Suite for CubeSat Applications. *AGU Fall Meeting* (2020)